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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/511,699

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Masato Doi

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EXAMINER

MCCLELLAND, KIMBERLY KEIL

ART UNIT

PAPER NUMBER

1734

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/511,699	Applicant(s) DOI ET AL.	
	Examiner Kimberly K. McClelland	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 36-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 36-39, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT Publication No. WO02/08463 as evidenced by corresponding U.S. Patent No. 6,872,635 to Hayashi et al. in view of U.S. Patent No. 5,426,342 to Nakamura et al.

3. With respect to claim 36, Hayashi et al. discloses embedding other-side devices (3) arranged on a first substrate into a adhesive layer (7) provided on a second substrate(6) where one-side devices (8) are embedded in the adhesive layer; and stripping the other-side devices from the first substrate thereby holding the other-side devices in an embedded states in the adhesive layer (See Figure 2A-2F) wherein the other-side devices and one-side devices are light emitting diodes (See paragraph 0170). However, Hayashi et al. does not disclose using pressure sensitive adhesive. Nakamura et al. discloses a method of manufacturing a fluorescent display device, including using a heat sensitive and pressure sensitive adhesive layer (column 4, lines 45-53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the pressure sensitive adhesive, taught by Nakamura et al., with the element transfer method disclosed by Hayashi et al. The motivation would

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have been to use an adhesive with good volatility and satisfactory adhesion (Nakamura et al., column 4, lines 45-53). Therefore, it would have been obvious to combine Nakamura et al. with Hayashi et al. to obtain the invention as disclosed in claim 36.

4. As to claim 37, Hayashi et al. discloses the one-side devices and the other-side devices have different characteristics (See paragraph 0126).

5. As to claim 38, Hayashi et al. discloses the one-side (8) devices and the other-side devices (3a) are held in the embedded state in different areas on the substrate (See Figure 2D).

6. As to claim 39, Hayashi et al. discloses embedding devices (42) arranged on a first substrate (41) into a adhesive layer (45) provided on a second substrate (43, See Figure 10) wherein the devices are light emitting diodes (See paragraph 0170); stripping the devices from the first substrate thereby holding the devices in an embedded state in the adhesive layer (See Figure 11), and hardening the adhesive layer (See paragraph 0157); forming first electric wirings (46) on the adhesive layer, adhering a third substrate (47) onto a side on which the first electric wirings are formed of the adhesive layer, and stripping the second substrate and the adhesive layer from each other (See Figure 12); and providing adhesive layer with openings (65, See Figure 16) reaching the devices, filling the openings with a conductive material (49), and forming second electric wirings (63, 64) on the adhesive layer. However, Hayashi et al. does not disclose using pressure sensitive adhesive. Nakamura et al. discloses a method of manufacturing a fluorescent display device, including using a heat sensitive and pressure sensitive adhesive layer (column 4, lines 45-53). It would have been obvious to one of ordinary

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skill in the art at the time the invention was made to combine the pressure sensitive adhesive, taught by Nakamura et al., with the element transfer method disclosed by Hayashi et al. The motivation would have been to use an adhesive with good volatility and satisfactory adhesion (Nakamura et al., column 4, lines 45-53). Therefore, it would have been obvious to combine Nakamura et al. with Hayashi et al. to obtain the invention as disclosed in claim 39.

7. As to claim 41, Hayashi et al. discloses embedding one-side devices (42) arranged on a first substrate (41) into a adhesive layer (45) provided on a second substrate (43, See Figure 10), and stripping the one-side devices from the first substrate thereby holding the one-side devices in an embedded state in the adhesive layer (See Figure 11); further embedding other-side devices arranged on the first substrate into the adhesive layer (See paragraph 0170), and stripping the other-side devices from the first substrate thereby holding the other-side devices (62) in an embedded state in the adhesive layer, where the one-side devices are embedded in the adhesive layer wherein the one-side devices and the other side devices are light emitting diodes (See paragraph 0170); hardening the adhesive layer where the one-side devices and the other-side devices are held in the embedded state in the adhesive layer (See paragraph 0157); forming first electric wirings on the adhesive layer (46), adhering a third substrate (47) onto the side on which the first electric wirings are formed of the adhesive layer, and stripping the second substrate and the adhesive layer from each other (See Figure 12); and providing the adhesive layer with openings reaching the one-side devices or the other-side devices, filling the openings with a conductive material (49),

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and forming second electric wirings on the adhesive layer (63, 64, See Figure 16).

However, Hayashi et al. does not disclose using pressure sensitive adhesive.

Nakamura et al. discloses a method of manufacturing a fluorescent display device, including using a heat sensitive and pressure sensitive adhesive layer (column 4, lines 45-53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the pressure sensitive adhesive, taught by Nakamura et al., with the element transfer method disclosed by Hayashi et al. The motivation would have been to use an adhesive with good volatility and satisfactory adhesion (Nakamura et al., column 4, lines 45-53). Therefore, it would have been obvious to combine Nakamura et al. with Hayashi et al. to obtain the invention as disclosed in claim 41.

8. As to claim 42, Hayashi et al. discloses the one-side devices and the other-side devices have different characteristics (See paragraph 0170).

9. As to claim 43, Hayashi et al. discloses one-side devices and the other-side devices are held in the embedded state in different areas on the second substrate (See Figure 16).

10. Claims 40 and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT Publication No. WO02/08463 as evidenced by corresponding U.S. Patent No. 6,872,635 to Hayashi et al. in view of U.S. Patent No. 5,426,342 to Nakamura et al. as applied to claims 36-39, and 41-43 above, and further in view of U.S. Patent Application Publication No. 2003/0227253 to Seo et al.

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11. With respect to claim 40, Hayashi et al. discloses an element transfer method, including using light emitting devices as elements (See paragraph 0170). Nakamura et al. discloses the use of a pressure and heat sensitive adhesive to adhere the elements to a substrate. However, Hayashi et al. and Nakamura et al. do not disclose driving methods. Seo et al. discloses display is carried out through simple matrix driving by impressing a voltage on the devices through the first electric wirings and the second electric wirings (See paragraph 0016). It would have been obvious to one of ordinary skill in the art to combine the driving method of Seo et al. with the element transfer method, disclosed by Hayashi et al. and the pressure sensitive adhesive taught by Nakamura et al. The motivation would have been to cause electroluminescence (Seo et al., See paragraph 0051). Therefore it would have been obvious to combine Seo et al. with Hayashi et al. and Nakamura et al. to obtain the invention as disclosed in claim 40.

12. As to claim 44, Hayashi et al. discloses an element transfer method, including using light emitting devices as elements (See paragraph 0170). Nakamura et al. discloses the use of a pressure and heat sensitive adhesive to adhere the elements to a substrate. However, Hayashi et al. and Nakamura et al. do not disclose driving methods. Seo et al. discloses display is carried out through simple matrix driving by impressing a voltage on the devices through the first electric wirings and the second electric wirings (See paragraph 0016). It would have been obvious to one of ordinary skill in the art to combine the driving method of Seo et al. with the element transfer method, disclosed by Hayashi et al. and the pressure sensitive adhesive taught by Nakamura et al. The motivation would have been to cause electroluminescence (Seo et

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al., See paragraph 0051). Therefore it would have been obvious to combine Seo et al. with Hayashi et al. and Nakamura et al. to obtain the invention as disclosed in claim 44.

13. As to claim 45, Hayashi et al. discloses one of the one-side devices and the other-side devices are any one of display devices and driving circuit devices (see paragraph 0170).

14. As to claim 46, Hayashi et al. discloses an element transfer method, including using light emitting devices as elements (See paragraph 0170). Nakamura et al. discloses the use of a pressure and heat sensitive adhesive to adhere the elements to a substrate. However, Hayashi et al. and Nakamura et al. do not disclose driving methods. Seo et al. discloses display is carried out through active matrix driving by impressing a voltage on the display devices by the driving circuit devices. (See paragraph 0016). It would have been obvious to one of ordinary skill in the art to combine the driving method of Seo et al. with the element transfer method, disclosed by Hayashi et al. and the pressure sensitive adhesive taught by Nakamura et al. The motivation would have been to allow for drive at a low voltage (Seo et al., See paragraph 0052). Therefore it would have been obvious to combine Seo et al. with Hayashi et al. and Nakamura et al. to obtain the invention as disclosed in claim 46.

Response to Arguments

15. Applicant's arguments filed November 9th, 2006 have been fully considered but they are not persuasive.

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16. Applicant argues on page 5 that Nakamura does not disclose the use of a pressure sensitive adhesive during the transfer of light emitting devices. This argument is not persuasive. Nakamura teaches the use of pressure sensitive adhesives during the transfer of electronic devices (column 4, lines 45-53). Hayashi, the primary reference, discloses the transfer of light emitting diodes (See paragraph 0170). The rejections of claims 36-46 are based on the combination of the teachings of these references. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the pressure sensitive adhesive, taught by Nakamura et al., with the element transfer method disclosed by Hayashi et al. The motivation would have been to use an adhesive with good volatility and satisfactory adhesion (Nakamura et al., column 4, lines 45-53). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

17. As a result, the rejections of claims 36-46 under 35 U.S.C. 103(a) over Hayashi in view of various secondary references are maintained.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly K. McClelland whose telephone number is (571) 272-2372. The examiner can normally be reached on 8:00 a.m.-5 p.m. Mon-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris A. Fiorilla can be reached on (571)272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kim McClelland

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PRIMARY EXAMINER